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REMARKS

In the Office Action, the Examiner noted that claims 1-26 are pending in the application and that claims 1-26 are rejected. By this response claims 1-9 and 15 are amended to correct for informalities pointed out by the Examiner and to more clearly define the Applicant's invention and not in response to prior art. All other claims are unamended by this response.

In view of both the amendments presented above and the following discussion, the Applicant submits that none of the claims now pending in the application are anticipated under the provisions of 35 U.S.C. §102 or obvious under the provisions of 35 U.S.C. §103. Furthermore, the Applicant also submits that all of these claims now satisfy the requirements of 35 U.S.C. §112. Thus, the Applicant believes that all of these claims are now in allowable form.

Rejections

A. 35 U.S.C. §112

The Examiner has rejected claim 15 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention. The Examiner notes that regarding claim 15, the phrase "selected to be substantially unique" renders the claim indefinite because it is unclear what and how the selected synchronization pattern is unique.

In response to the Examiner's rejection, the Applicant has amended claim 15 to more particularly point out the invention of the Applicant. More specifically, the Applicant has amended claim 15 to remove the limitation of "selected to be substantially unique" and has included the limitation of "respective relatively long synchronization pattern".

Having made these changes, the Applicant respectfully submits that the basis for the Examiner's rejection of the Applicant's claim 15 has been removed. As such, the Applicant respectfully requests that the Examiner's rejection of claim

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15 be withdrawn. The Applicant submits that claim 15, as it now stands, is definite and hence fully satisfies the requirements of 35 U.S.C. §112.

B. 35 U.S.C. §112

The Examiner has rejected claim 1 under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement. The Examiner notes that claim 1, is a single means claim where a means recitation does not appear in combination with another recited element of means, is subject to an undue breadth rejection under 35 U.S.C. §112.

In response to the Examiner's rejection, the Applicant has amended claim 1 to more particularly point out the invention of the Applicant. More specifically, the Applicant has amended claim 1 to recite a method of data communication where data frames are transmitted with inter-packet gaps (IPGs), each IPG having positioned within it at least a synchronization pattern suitable for delineating a respective data frame.

Having made these changes, the Applicant respectfully submits that the basis for the Examiner's rejection of the Applicant's claim 1 has been removed. As such, the Applicant respectfully requests that the Examiner's rejection of claim 1 be withdrawn. The Applicant submits that claim 1, as it now stands, is enabling and hence fully satisfies the requirements of 35 U.S.C. §112.

C. 35 U.S.C. §101

The Examiner has rejected claim 1 under 35 U.S.C. §101, alleging that the claimed invention is directed to algorithm or data format not embedded in computer readable medium because a data structure is a specialized format for organizing and storing data which in general include the array, the file, the record, the table, the tree, etc...and any data structure is designed to organize data to suit a specific purpose.

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In response to the Examiner's rejection, the Applicant has amended claim 1 to claim a method of the invention of the Applicant. More specifically, the Applicant has amended claim 1 to recite a method of data communication where data frames are transmitted with inter-packet gaps (IPGs), each IPG having positioned within it at least a synchronization pattern suitable for delineating a respective data frame.

Having made these changes, the Applicant respectfully submits that the basis for the Examiner's rejection of the Applicant's claim 1 has been removed. As such, the Applicant respectfully requests that the Examiner's rejection of claim 1 be withdrawn. The Applicant submits that claim 1, as it now stands, is directed to a proper class of patentable invention and hence fully satisfies the requirements of 35 U.S.C. §101.

D. 35 U.S.C. § 102(e)

The Examiner has rejected claims 1-4, 7, 8 and 20 under 35 U.S.C. § 102(e) as being anticipated by Treadaway et al. (U.S. Patent No. 6,665,285, hereinafter "Treadaway"). The rejection is respectfully traversed.

Regarding claim 1, the Examiner alleges that Treadaway teaches all of the aspects of the Applicant's invention. The Applicant respectfully disagrees.

"Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim" (Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co., 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984)(citing Connell v. Sears, Roebuck & Co., 722 F.2d 1542, 220 USPQ 193 (Fed. Cir. 1983)) (emphasis added). The Applicant respectfully submits that Treadaway fails to disclose each and every element of the claimed invention, as arranged in at least the Applicant's claim 1, which specifically recites:

"A method of data communication, comprising:

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transmitting a plurality of data frames temporally separated by respective inter-packet gaps (IPGs), **each IPG having positioned within it at least a synchronization pattern suitable for delineating a respective data frame.**" (emphasis added).

In accordance with at least the Applicant's claim 1 recited above, it is evident that the Applicant's invention is directed at least in part to a method for data communication where inter-packet gaps are utilized for storing indications of the beginning of a control portion of a data stream and the end of a data frame. Support for at least the Applicant's claim 1 is found in the Applicant's Specification where the Applicant specifically recites:

"The present invention provides a data structure, method, apparatus and protocol that utilizes the so-called inter-packet gap (IPG) to store a relatively long termination flag (T-FLAG) and a relatively short sequence identification nonce. The termination flag is used to indicate the beginning of a control portion of a data stream, where the data stream is divided into alternating control and data portions, each of the data portions comprising a packet or frame. Thus, the termination flag also indicates the end of a data frame." (See Applicant's Specification, Summary).

In further support of at least the Applicant's claim 1, the Applicant in the Specification further recites:

"FIG. 5 depicts a flow diagram of a packet processing method suitable for use in a transmitter according to the invention. The method 500 of FIG. 5 is entered at step 510 when a data packet to be transmitted is received.

At step 520, termination flag data is inserted within the respective IPG. That is, at step 520A, a 9 to 12 byte (preferably) termination flag (T-FLAG) or synchronization pattern is appended to the data packet in a manner temporally occupying at least a portion of the 12 byte minimum inter-packet gap (IPG) previously discussed. The T-FLAG comprises a unique bit pattern that will be detected by a receiver such that packet delineation may be determined." (See Applicant's Specification, page 11, line 16-25).

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Again, it is very clear from at least the portion of the Applicant's Specification recited above, that the Applicant's invention of claim 1, is directed, at least in part, to a method of transmitting a bit pattern within an inter-packet gap such that a receiver may determine packet delineation.

In contrast to the Applicant's invention, Treadaway specifically recites:

"The rate control logic 250 then temporarily stores the packets in rate buffers 252. In the preferred embodiment, the bytes for each packet are clocked into the rate buffers 252 according a clock signal recovered from the data. The rate buffers 252 preferably include two first-in, first-out (FIFO) buffers having 16 K entries, one for packets being transmitted and one for packets being received. The FIFO buffers each preferably provides sufficient storage for each entry so that additional information can be stored in the rate buffers 252 along with the byte of data. Such additional information preferably includes the data valid bit for each nibble and an indication of whether the nibble is payload data or overhead for the 100BASE-T Ethernet packets. For example, the overhead can include inter-packet gaps codes (e.g. one byte/octet of all zeros with associated data valid bits de-asserted), and start-of-packet codes. Assuming inter-packet gap codes are stored, preferably only one inter-packet gap code, representative of the minimum required inter-packet gap (e.g. of 0.96 μ s), is stored in the rate buffers 252.

At optional step 530, a first type of nonce is generated and utilized. Specifically, at step 532, the number of double words in the received packet is calculated and, at step 534, the double word count is inserted within the respective IPG." (See Treadaway, col. 11, lines 26-51).

As evident from at least the portion of Treadaway recited above, it is clear that the invention of Treadaway is directed to an Ethernet switch in a terminal including a MAC where the MAC includes a rate control logic device. The rate control logic device of Treadaway detects each data packet received from a transceiver and calculates the length of each data packet. The rate control logic device then temporarily stores the packets in rate buffers. Along with the data packet, additional information regarding the data packet is stored. For example, overhead can include inter-packet gaps codes. The inter-packet gap codes represent the minimum required inter-packet gaps for the transmission of the data packets.

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(See Treadaway, col. 10, line 58 to col. 11, line 67). There is however, absolutely no teaching, suggestion or disclosure in Treadaway for "transmitting a plurality of data frames temporally separated by respective inter-packet gaps (IPGs), **each IPG having positioned within it at least a synchronization pattern suitable for delineating a respective data frame**" as taught by the Applicant's Specification and claimed in at least the Applicant's claim 1. More specifically, Treadaway does not teach or suggest the transmission of a synchronization pattern in inter-packet gaps of data packets such that the unique bit pattern will be detected by a receiver such that packet delineation may be determined. Instead in Treadaway, a data packet is stored in a rate buffer, and along with the data packet, information regarding a minimum required inter-packet gap for the data packet is also stored. The storing of such information within an inter-packet gap itself is absolutely not taught, suggested or disclosed by Treadaway.

Therefore, the Applicant submits that claim 1 is not anticipated by the teachings of Treadaway and, as such, fully satisfies the requirements of 35 U.S.C. § 102 and is patentable thereunder.

Likewise, independent claims 10, 15 and 20 recite similar relevant features as recited in claim 1. As such, and for at least the reasons stated herein, the Applicant submits that claims 10, 15 and 20 are also not anticipated by the teachings of Treadaway and, as such, also fully satisfy the requirements of 35 U.S.C. § 102 and are patentable thereunder.

Furthermore, dependent claims 2-9, 11-14, 16-19, and 21-26 depend either directly or indirectly from independent claims 1, 10, 15 and 20 and recite additional limitations therefor. As such, and for at least the reasons set forth herein, the Applicant submits that none of these claims are anticipated by the teachings of Treadaway. Therefore, the Applicant submits that all these dependent claims also fully satisfy the requirements of 35 U.S.C. § 102 and are patentable thereunder.

The Applicant reserves the right to establish the patentability of each of the claims individually in subsequent prosecution.

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E. 35 U.S.C. § 103(a)

The Examiner has rejected claims 5, 6, 11, 12 and 14-19 under 35 U.S.C. § 103(a) as being unpatentable over Treadaway in view of Rouse (U.S. Patent No. 5,260,933). The rejection is respectfully traversed.

Claims 5 and 23

Regarding claims 5 and 23, the Examiner alleges that Treadaway teaches all of the limitations of the Applicant's invention except that Treadaway fails to teach "CRC" for detecting errors data element generated and positioned within the data frame. As such, the Examiner cites Rouse for teaching "CRC" for detecting errors data element generated and positioned within the data frame. The Applicant respectfully disagrees.

The Examiner applied Treadaway for the rejection of claims 5 and 23 as applied above for the Examiner's rejection of claims 1 and 20. For at least the reasons recited above, the Applicant respectfully submits that the teachings of Treadaway, alone do not teach, suggest or disclose at least the Applicant's claims 1 and 20. More specifically, Treadaway does not teach, suggest or disclose "transmitting a plurality of data frames temporally separated by respective inter-packet gaps (IPGs), **each IPG having positioned within it at least a synchronization pattern suitable for delineating a respective data frame**" as taught by the Applicant's Specification and claimed in at least the Applicant's claim 1 and claim 20. That is, Treadaway does not teach or suggest the transmission of a synchronization pattern in inter-packet gaps of data packets such that the unique bit pattern will be detected by a receiver such that packet delineation may be determined. As such, and for at least the reason that Treadaway does not teach, suggest or disclose the Applicant's claims 1 and 20, the Applicant further submits that Treadaway also does not teach, suggest or disclose the Applicant's claims 5 and 23, which depend from claims 1 and 20 and recite additional limitations therefor.

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In addition, the Applicant respectfully submits that the teachings of Rouse alone, also do not teach, suggest or disclose the invention of the Applicant, at least with respect to independent claims 1 and 20 and dependent claims 5 and 23. More specifically, Rouse teaches a system and method for controlling the transmission of frames or packets of data in a serial network which allows out-of-order delivery. In Rouse, the data frames transmitted by an initiator node to the recipient node include frame serial number or sequence count information. However, there is absolutely no teaching, suggestion or disclosure in Rouse for "transmitting a plurality of data frames temporally separated by respective inter-packet gaps (IPGs), **each IPG having positioned within it at least a synchronization pattern suitable for delineating a respective data frame**" as taught by the Applicant's Specification and claimed in at least the Applicant's claim 1 and claim 20. That is, Rouse does not teach or suggest the transmission of a synchronization pattern in inter-packet gaps of data packets such that the unique bit pattern will be detected by a receiver such that packet delineation may be determined. As such, and for at least the reason that Rouse does not teach, suggest or disclose the Applicant's claims 1 and 20, the Applicant further submits that Rouse also does not teach, suggest or disclose the Applicant's claims 5 and 23, which depend from claims 1 and 20 and recite additional limitations therefor.

Furthermore, the Applicant submits that there is absolutely no motivation or suggestion in either reference for the combination of Treadaway and Rouse to attempt to teach the invention of the Applicant. More specifically, there is obviously no motivation or suggestion in Treadaway for the combination of the references. Likewise, Rouse does not expressly or impliedly motivate or suggest such a combination.

For prior art reference to be combined to render obvious a subsequent invention under 35 U.S.C. § 103, there must be something in the prior art as a whole which suggests the desirability, and thus the obviousness, of making the combination. Uniroyal v. Rudkin-Wiley, 5 U.S.P.SQ.2d 1434, 1438 (Fed. Cir. 1988). The teachings of the references can be combined only if there is some

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suggestion or incentive in the prior art to do so. In re Fine, 5 U.S.P.SQ.2d 1596, 1599 (Fed. Cir. 1988). ***Hindsight is strictly forbidden. It is impermissible to use the claims as a framework to pick and choose among individual references to recreate the claimed invention*** Id. at 1600; W.L. Gore Associates, Inc., v. Garlock, Inc., 220 U.S.P.Q. 303, 312 (Fed. Cir. 1983). (emphasis added)

Moreover, the mere fact that a prior art structure could be modified to produce the claimed invention would not have made the modification obvious unless the prior art suggested the desirability of the modification. In re Fritch, 23 U.S.P.Q.2d 1780, 1783 (Fed. Cir. 1992); In re Gordon, 221 U.S.P.Q. 1125, 1127 (Fed. Cir. 1984).

The Applicant further submits that even if there was a motivation or suggestion to combine (which the Applicant maintains that there is not), the teachings of Treadawya and Rouse, in any allowable combination, fail to teach, suggest or make obvious the Applicant's invention, at least with regard to independent claims 1 and 20 and in addition, with respect to claims 5 and 23, which depend from claims 1 and 20 and recited additional limitations therefor. More specifically, the teachings of Treadaway and Rouse fail to teach, suggest or make obvious "transmitting a plurality of data frames temporally separated by respective inter-packet gaps (IPGs), **each IPG having positioned within it at least a synchronization pattern suitable for delineating a respective data frame**" as taught by the Applicant's Specification and claimed in at least the Applicant's claim 1 and claim 20. That is, any allowable combination of Treadaway and Rouse does not teach or suggest the transmission of a synchronization pattern in inter-packet gaps of data packets such that the unique bit pattern will be detected by a receiver such that packet delineation may be determined.

As such and for at least the reasons described above, the Applicant respectfully submits that neither the Ethernet switch taught in Treadaway nor the acknowledgment protocol taught in Rouse, alone or in any allowable combination,

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renders obvious the "transmitting a plurality of data frames temporally separated by respective inter-packet gaps (IPGs), each IPG having positioned within it at least a synchronization pattern suitable for delineating a respective data frame" as taught by the Applicant's Specification and claimed in at least the Applicant's claim 1 and claim 20. As such and for at least the reason that Treadaway and Rouse, alone or in any allowable combination, fail to teach or suggest the invention of the Applicant with regard to claims 1 and 20, the Applicant further submits that the teachings of Treadaway and Rouse, alone or in any allowable combination, also fail to teach or suggest the invention of the Applicant with regard to claims 5 and 23, which depend from claims 1 and 20.

Therefore, the Applicant submits that claims 5 and 23 as they now stand, fully satisfy the requirements of 35 U.S.C. § 103 and are patentable thereunder.

Likewise dependent claims 6, 11-12, 14, and 16-19 depend either directly or indirectly from independent claims 1, 10, and 15, which recite similar relevant features as independent claims 1 and 20. As such, and for at least the reasons stated above, the Applicant submits that dependent claims 6, 11-12, 14, and 16-19 are also not obvious with respect to the teachings of Treadaway and Rouse, alone or in any allowable combination. Therefore the Applicant submits that dependent claims 6, 11-12, 14, and 16-19 also fully satisfy the requirements of 35 U.S.C. § 103 and are patentable thereunder.

The Applicant reserves the right to establish the patentability of each of the claims individually in subsequent prosecution.

F. 35 U.S.C. § 103(a)

The Examiner has rejected claims 9, 10, 13 and 24-26 under 35 U.S.C. § 103(a) as being unpatentable over Treadaway. The rejection is respectfully traversed.

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Claims 9 and 24-26

Regarding claims 9 and 24-26, the Examiner alleges that Treadaway teaches all of the limitations of the Applicant's invention except that Treadaway fails to teach a pointer data element for indicating the position of next data element. However, the Examiner alleges that it would have been obvious to one skilled in the art at the time the invention was made that a pointer is required in the data structure to locate and identify a location in internal storage. The Applicant respectfully disagrees.

The Examiner applied Treadaway for the rejection of claims 9 and 24-26 as applied above for the Examiner's rejection of claims 1 and 20. For at least the reasons recited above, the Applicant respectfully submits that the teachings of Treadaway, alone do not teach, suggest or disclose at least the Applicant's claims 1 and 20. More specifically, Treadaway does not teach, suggest or disclose "transmitting a plurality of data frames temporally separated by respective inter-packet gaps (IPGs), **each IPG having positioned within it at least a synchronization pattern suitable for delineating a respective data frame**" as taught by the Applicant's Specification and claimed in at least the Applicant's claim 1 and claim 20. That is, Treadaway does not teach or suggest the transmission of a synchronization pattern in inter-packet gaps of data packets such that the unique bit pattern will be detected by a receiver such that packet delineation may be determined. As such, and for at least the reason that Treadaway does not teach, suggest or disclose the Applicant's claims 1 and 20, the Applicant further submits that Treadaway also does not teach, suggest or disclose the Applicant's claims 9 and 24-26, which depend from claims 1 and 20 and recite additional limitations therefor.

As such and for at least the reasons described above, the Applicant respectfully submits that the Ethernet switch taught in Treadaway does not render obvious the "transmitting a plurality of data frames temporally separated by respective inter-packet gaps (IPGs), **each IPG having positioned within it at least a synchronization pattern suitable for delineating a respective data**

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frame" as taught by the Applicant's Specification and claimed in at least the Applicant's claim 1 and claim 20. As such and for at least the reason that Treadaway fails to teach or suggest the invention of the Applicant at least with regard to claims 1 and 20, the Applicant further submits that the teachings of Treadaway also fail to teach or suggest the invention of the Applicant with regard to claims 9 and 24-26, which depend from claims 1 and 20.

Therefore, the Applicant submits that claims 9 and 24-26 as they now stand, fully satisfy the requirements of 35 U.S.C. § 103 and are patentable thereunder.

Likewise, independent claim 10 recites similar relevant features as recited in claim 1. As such, and for at least the reasons stated herein, the Applicant submits that claim 10 is also not rendered obvious by the teachings of Treadaway and, as such, also fully satisfies the requirements of 35 U.S.C. § 103 and is patentable thereunder.

Furthermore, dependent claim 13 depends directly from independent claim 10 and recites additional limitations therefor. As such, and for at least the reasons stated herein, the Applicant submits that dependent claim 13 is also not obvious with respect to the teachings of Treadaway. Therefore the Applicant submits that dependent claims 13 also fully s the requirements of 35 U.S.C. § 103 and is patentable thereunder.

The Applicant reserves the right to establish the patentability of each of the claims individually in subsequent prosecution.

Conclusion

Thus the Applicant submits that none of the claims, presently in the application, are anticipated under the provisions of 35 U.S.C. §102 or obvious under the provisions of 35 U.S.C. §103. Furthermore, the Applicant also submits that all of these claims now satisfy the requirements of 35 U.S.C. §112. Consequently, the Applicant believes that all these claims are presently in

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condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If however, the Examiner believes that there are any unresolved issues requiring adverse final action in any of the claims now pending in the application, it is requested that the Examiner telephone Jorge Tony Villabon, Esq. at (732) 530-9404 x 1131 or Eamon J. Wall, Esq. at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,



Eamon J. Wall Attorney
Reg. No. 39,414

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CUSTOMER #26,291
Moser Patterson & SHERIDAN, LLP
595 Shrewsbury Avenue, Suite 100
Shrewsbury, New Jersey 07702
732-530-9404 - Telephone
732-530-9808 - Facsimile